Listing of Claims:

This listing of claims is provided for the Examiner's convenience, as no claim has been amended, added or canceled.

1. (Original) A touch sensitive apparatus, comprising:

a touch plate;

a plurality of sensors coupled to the touch plate, each of the sensors configured to sense bending waves in the touch plate;

an excitation transducer coupled to the touch plate and configured to induce bending waves in the touch plate;

a plurality of active buffer circuits, each of the active buffer circuits respectively coupled to one of the sensors; and

a controller coupled to the sensors via the active buffer circuits and to the excitation transducer via a non-actively buffered connection, the controller configured to compute information related to a touch on the touch plate responsive to sense signals received by the sensors.

2. (Original) The apparatus of claim 1, wherein the information related to the touch comprises touch location.

3. (Original) The apparatus of claim 1, wherein the information related to the touch comprises information concerning detection of a lift-off of the touch.

4. (Original) The apparatus of claim 1, wherein:

the touch plate is substantially rectangular;

the plurality of sensors comprises four sensors each positioned at a respective corner of the touch plate; and

the excitation transducer is positioned proximate a peripheral edge of the touch plate.

5. (Original) The apparatus of claim 1, wherein the plurality of sensors comprises piezoelectric sensors.

6. (Original) The apparatus of claim 5, wherein the excitation transducer comprises a piezoelectric transducer.

7. (Original) The apparatus of claim 1, wherein each of the active buffer circuits comprises a field effect transistor.

8. (Original) The apparatus of claim 1, wherein the plurality of sensors, the plurality of active buffer circuits, and the excitation transducer are respectively disposed on the touch plate.

9. (Original) The apparatus of claim 1, wherein the excitation transducer is configured to induce bending waves in the touch plate and to sense bending waves in the touch plate.

10. (Original) The apparatus of claim 1, wherein each of the sensors is configured to provide a differential sense signal to a balanced input of one of the active buffer circuits, and each of the active buffer circuits is coupled to a balanced input of the controller.

11. (Original) The apparatus of claim 1, wherein:

the sensors produce bending wave signals responsive to the induced bending waves; and

the controller computes relative dimensions of the touch plate using the bending wave signals.

12. (Original) The apparatus of claim 1, wherein:

the sensors produce bending wave signals responsive to the induced bending waves; and

the controller computes absolute dimensions of the touch plate using the bending wave signals.

13. (Original) The apparatus of claim 1, wherein:

the sensors produce bending wave signals responsive to the induced bending waves;

the controller computes dimensions of the touch plate using the bending wave signals; and

the controller computes a phase response of each of the sensors using the computed touch plate dimensions, a dispersion relation, and a measured phase response.

14. (Original) The apparatus of claim 1, wherein the excitation transducer induces bending waves in the touch plate in response to a non-audible tone signal.

15. (Original) The apparatus of claim 1, wherein the controller comprises an analog-to-digital converter (ADC) having a sampling frequency, the controller generating a tone signal having a frequency substantially equal to that of the sampling frequency of the ADC and communicating the generated tone signal to the excitation transducer.

16. (Original) The apparatus of claim 1, wherein the excitation transducer induces bending waves in the touch plate in response to a non-audible multiple tone signal.

17. (Original) The apparatus of claim 16, wherein the multiple tone signal comprises tones having frequencies that are spatially non-periodic.

18. (Original) The apparatus of claim 1, wherein the excitation transducer induces a non-audible broadband noise stimulus in the touch plate.

19. (Original) The apparatus of claim 1, wherein the excitation transducer induces bending waves in the touch plate in response to receiving a swept tone signal from the controller, the sensors producing bending wave signals responsive to the induced bending waves.

20. (Original) The apparatus of claim 19, wherein the controller comprises a demodulator that demodulates the bending wave signals synchronously with respect to the swept tone signal.

21. (Original) The apparatus of claim 1, wherein:

the controller comprises an analog-to-digital converter (ADC) having a sampling frequency, f_s; and

the excitation transducer induces bending waves in the touch plate having frequencies greater than $f_s/2$.

22. (Original) The apparatus of claim 21, wherein:

the sensors produce bending wave signals responsive to the induced bending waves having frequencies greater than $f_s/2$; and

the ADC registers the bending wave signals as aliased bending wave signals having frequencies lower than $f_s/2$.

23. (Original) The apparatus of claim 1, wherein:

the controller comprises an analog-to-digital converter (ADC) having a sampling frequency, f_s; and

the excitation transducer induces bending waves in the touch plate having a frequency substantially equal to f_s.

24. (Original) The apparatus of claim 23, wherein:

the sensors produce bending wave signals responsive to the induced bending waves; and

the ADC registers the bending wave signals as aliased bending wave signals having a dc offset determined by an amplitude and a phase of the induced bending waves.

25. (Previously presented) The apparatus of claim 1, wherein:

the excitation transducer is configured to induce bending waves in the touch plate and to sense bending waves in the touch plate; and

the controller further comprises wake-up circuitry coupled to the excitation transducer, the wake-up circuitry configured to generate a wake-up signal in response to the excitation transducer sensing a touch to the touch plate and to communicate the wake-up signal to the controller.

26. (Original) The apparatus of claim 25, wherein at least the active buffer circuits transition from a sleep mode to an operating mode responsive to the controller receiving the wake-up signal.

27. (Original) The apparatus of claim 1, further comprising a display coupled to the touch sensitive apparatus.

28. (Original) The apparatus of claim 1, further comprising:

a display coupled to the touch sensitive apparatus; and

a host processor coupled to the display and the touch sensitive apparatus.

29-54. (Canceled)